

Proposals for Amendment of the Drawings:

Applicant proposes the addition of Figures 12-16. A copy is attached to this paper.

REMARKS

Drawings

1. The Examiner has objected to drawings received at the Patent Office on June 10, 2004.
2. The Examiner has objected to drawings received at the Patent Office on July 19, 2004.
3. The Examiner has objected to the drawings under 37 C.F.R. 1.83(a) and has required that the drawings must show every feature of the invention specified in the claims. Specifically, the Examiner has suggested that the method of stimulating the central nervous system must be shown in the drawings.

Accordingly, Figures 12-16 have been provided showing the steps of each of the independent method claims. Page 3 of the description has also been amended to reflect the new figures. Applicant submits that no new subject matter has been added.

Claims Rejection - 35 USC § 112

4. The Examiner has rejected claim 15 as being indefinite for not stating whether the stimulation frequency is referred to auditory or visual stimulus. To overcome the Examiner's objection, claim 15 has been amended to clearly indicate that the stimulations are visual or auditory.
5. The Examiner has rejected claim 9 on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 14 and 15 of U.S. Patent No. 5,709,645.

Applicant respectfully submits that the subject matter of present claim 9 differs significantly from claims 14 and 15 of Applicant's U.S. Patent No. 5,709,645. Claim 9 is related to a process for disassociating a subject; a process specifically targeted to relax the subject and diminish feelings of anxiety or worry. This is achieved, as taught in claim 9, by separately stimulating the subject's left and right brain hemispheres to photic stimulation frequencies that differ from each other by only 0.1 to 3 Hz.

By contrast, claim 14 of the '645 patent teaches a very general method of stimulating the central nervous system, without any indication of the desired psychological outcome of such a method. A person skilled in the art would quickly note that the method of claim 14 of the '645 patent could easily lead to excitation or higher brain activity in a subject; the exact opposite of the goals of present claim 9. Furthermore, claim 15 of the '645 patent teaches that the difference in stimulation frequencies for each brain hemisphere can be none (12 Hz each) or up to 8 Hz, which differs greatly from the narrower, more specific range of present claim 9.

Claims Rejection - 35 USC § 102

6. The Examiner has rejected claim 14 as being anticipated by U.S. Patent No. 5,709,645. Applicant respectfully disagrees and provides the following comment.

Claim 14 of the present invention teaches a specific process of separately stimulating the left and right hemispheres of a subject's brain to treat depression. This goal is achieved by differing the stimulation frequencies in each brain hemisphere by 3 to 12 Hz. As discussed earlier, claim 14 of Applicant's U.S. Patent No. 5,709,645 teaches a very general method of central nervous system stimulation by stimulating the left and right visual fields of each eye independently. There is no indication of the type of psychological goals that wish to be achieved in the cited portions of the '645 patent and a skilled practitioner would easily conclude that the '645 patent teaches a method that can have a very opposite effect to the teachings of present claim 14.

7. The Examiner has rejected claims 6 to 8 as being anticipated by Yashushi (U.S. Patent No. 5,241,967). Applicant again disagrees and provides the following comment.

Claims 6 to 8 are directed to a unique method of suppressing aberrant brain waves, by applying a stimulation frequency that is double the aberrant brain wave frequency to the user. Nowhere throughout Yasushi is there any comment that stimulation at double the aberrant brain wave frequency can act to suppress such aberrant brain waves. The Examiner cites Col 7, lines 1-6 and 45-51, however a detailed reading of these sections did not produce any indication of a method of suppressing aberrant brain waves, nor was there any teaching of stimulation comprising doubling the aberrant brain wave frequency. Applicant's claims 6-8 are very

precise and detailed in this regard, since they relate to a very specific process and nowhere in Yasushi can similar teachings be found.

Col 6, lines 7-19 of Yasushi, to the contrary of the present invention, teaches use of a stimulation frequency that lies exactly in the middle of a desired brain wave frequency to enhance brain wave activity at a particular brain wave frequency range. There is no teaching of suppression of aberrant brain waves. Applicant submits that the methods taught in present claim 6 is indeed novel and cannot be assumed to be known in the art.

Regarding Applicant's claims 7 and 8, although the Examiner has cited Col 6, lines 7-19 and Col 7, lines 45-51 as teaching seasonally affected disorder (SAD) and fibromyalgia syndrome (FMS) and methods of their treatment, no such teachings could be found from a detailed reading of these sections of Yasushi. Certainly there is no express teaching of suppressing 10 Hz brain waves by using 20 Hz frequency stimulation or of suppressing 7-9 Hz brain waves by using 14-18 Hz frequency stimulation.

8. The Examiner has rejected claims 9-12 as being anticipated by Gorges (U.S. Patent No. 4,315,502). Applicant respectfully disagrees.

The Examiner is requested to note that the essence of the inventive features of claims 9-12 lies in the fact that when the two hemispheres of the brain are separately stimulated at two very near but still different frequencies; this slight difference has a profound psychological effect on the user, namely rapid disassociation from self awareness. The preferred and optimum frequency variation of 0.1 to 3 Hz has been found to 'disconnect' the user from an otherwise state of, for example, fear, trauma or anxiety.

Coming now to Gorges, the Examiner himself agrees that there is no explicit or implicit teaching of the left and right hemispheres being stimulated at different frequencies. In particular, the slight frequency variation taught in the present claims cannot be found anywhere in Gorges.

The Examiner cites Col 2, lines 40-46 and Col 7, lines 13-16 as teaching the features of claims 10, 11, and 12. However, from a detailed reading of these sections of Gorge, no teaching could be found of a process of stimulating the left and right brain hemispheres at a low beta frequency

of between 12-15 Hz (claim 10), at a low-alpha or theta frequency of between 5-9 Hz (claim 11) or at a delta frequency of between 0-4 Hz (claim 12).

There is certainly no teaching of these frequencies of stimulation being used in conjunction with the slightly varied left and right brain hemisphere stimulation taught in claim 9. As well, Gorge does not teach, mention or infer any frequency use of less than 1 Hz, where as present claim 12 teaches a range of 0 to 4 Hz.

Claims Rejection - 35 USC § 103

9. The Examiner has rejected claims 1-5 as being unpatentable over Chuprikov (U.S. Patent No. 5,137,018) in view of Yoon (U.S. Patent No. 6,875,167). Applicant respectfully disagrees and provides the following comment.

As the Examiner has noted, Chuprikov teaches a method of showing the subject various colors of light until the subject perceives only one light color, which is totally unrelated to the present methods of photic stimulation deleted by exposing the subject to flashing light at various frequencies to alter brain wave patterns. As also noted by the Examiner, there is no teaching in Chuprikov of the particular frequencies used in claims 1 to 5 of the present application.

The Examiner has highlighted a comment in Yoon that human brain wave frequencies tend to equilibrate to frequencies of external stimulation. Applicant would submit that this general observation is well known in the art and is the basis for much work in this particular field of study. However, what is unknown and not taught in either of Yoon or Chuprikov is how different photic stimulation regimes using various frequencies of light stimulation can affect human brain wave patterns. The present inventor has conducted extensive research to arrive at the conclusion that varying frequencies in each hemisphere of the brain for certain lengths of time can help to diminish psychological conditions such as memory loss, attention deficit disorder etc.

Applicant respectfully submits that combination of the two cited references would by no means teach the specific stimulation regime of any of claims 1 to 5. Furthermore, the particular stimulation frequencies taught in claim 1 cannot be reached from a combined reading of the cited references.

Regarding claims 2 and 3, these claims depend upon claim 1 and must be read in such a context. When read in conjunction with claim 1, Applicant submits that Chuprikov does not teach a stimulation method similar to that of claims 2 or 3.

Present claims 4 and 5 teach that the transition between steps a/b and c in claim 1 is either rapid, taking about 30 seconds, or more gradual, taking at least 3 minutes. Sudden shifts in stimulation frequency are needed when treating attention deficit children, who can otherwise get bored or become easily distracted. Gradual shifting of stimulation frequency is useful when treating older patients or those suffering from anxiety, as the gradual shift has been found by the inventor to be gentler and less agitating on such subjects. Applicant submits that these features are unique to the present invention and not taught or suggested by the cited references.

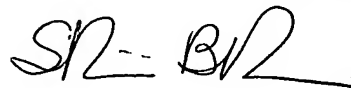
10. The Examiner has rejected claims 13 and 15-17 as being unpatentable over Gorges (U.S. Patent No. 4,315,502):

Regarding the Examiner's objection to claim 13 as being obvious in light of claim 10 of Gorges, the Examiner will note that claim 13 has been cancelled, thereby overcoming the Examiner's objection in this regard.

Regarding present claims 15 to 17, the Examiner admits that the cited reference is silent on the use of photic stimulation for pacing a patient's breathing. Although Gorges discusses mimicking a heart beat sound to relax a subject, there is no teaching of using photic or auditory stimulation to pace or control breathing.

In view of the foregoing arguments and amendments, Applicant respectfully submits that the application is now in good order for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'SR - B/R', is written over the typed name and contact information.

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